

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of claims:**

1. (Currently amended) A method comprising:
  - fetching data from a cache in a computer;
  - during the fetching, detecting a soft error in the data;
  - as a result of detecting the soft error, stalling the computer;
  - ~~performing a clearing operation~~
  - invoking soft error handler logic to perform one of multiple possible operations to clear the soft error, the multiple possible operations including one of flushing the cache, invalidating a cache line, and clearing an intermediate portion of the cache;
  - and
  - resuming fetching of the data.
2. - 4. (Canceled)
5. (Original) The method of claim 1, wherein the error is detected by comparing an expected parity of the cache line with a calculated parity of the cache line.
6. (Currently amended) A system comprising:
  - a memory;
  - a processor coupled to the memory;
  - a cache coupled to the processor;
  - soft error detection logic coupled to the cache to detect soft errors therein;
  - soft error handling decision logic coupled to the soft error detection logic to ~~perform one of a plurality of operations~~ invoke soft error handler logic based on an input from the soft error detection logic; and

[[a]] soft error handler ~~invokable by the soft error handling decision~~ logic to perform one of multiple possible operations to clear the soft error, the multiple possible operations including one of flushing the cache, invalidating a cache line, and clearing an intermediate portion of the cache.

7. (Canceled)

8. (Original) The system of claim 6, further comprising a soft error recovery memory to store information associated with recovering from a soft error.

9. (Original) The system of claim 8, wherein the information is an address of a cache line containing a soft error.

10. (Original) The system of claim 8, wherein the soft error recovery memory comprises a register.

11. (Previously presented) The system of claim 6, wherein the soft error detection logic is to compare an expected parity of a cache line with a calculated parity of the cache line.

12. (Original) The system of claim 6, wherein the soft error handling decision logic comprises a multiplexer configured to select as input one of data corresponding to a cache line currently being fetched and a request to invoke the soft error handler, depending on a value of an output of the soft error detection logic.

13. (Currently amended) A system processor comprising:  
a cache;  
soft error detection logic coupled to the cache; and  
decision logic to receive at least first, second and third input values, the first input value being a request to invoke a soft error handler, the second input value corresponding to data in a cache line of the instruction cache, and the third input value

being an indicator from the soft error detection logic to indicate whether a soft error is present in the data in the cache line; and

soft error handler logic to perform one of multiple possible operations to clear the soft error, the multiple possible operations including one of flushing the cache, invalidating a cache line, and clearing an intermediate portion of the cache.

14. (Currently amended) The system processor of claim 13, further comprising a register to store an address of a cache line containing data currently being fetched.

15. (Currently amended) The system processor of claim 13, wherein the soft error detection logic is to compare an expected parity of the data, and a calculated parity of the data.

16. (Canceled)

17. (Currently amended) ~~A method comprising~~ The method of claim 1, further comprising:

~~executing at least a portion of a sequence of computer instructions, at least one of the instructions being stored in a cache;~~

~~before fetching the at least one instruction from the cache for execution, determining whether the cache line contains a soft error; and~~

~~if it is determined that the cache line contains a soft error,~~

after detecting the soft error, storing the address of the cache line corresponding to the at least one instruction in a register; and

issuing a request to a soft error handler to clear the soft error.

18. (Original) The method of claim 17, wherein the soft error handler:

stops fetching of instructions from the cache;

reads the address in the register; and

clears the corresponding cache line.

19. (Original) The method of claim 17, further comprising resuming execution of the sequence of computer instructions at the instruction corresponding to the cleared cache line.

20. (Currently amended) A ~~computer-usable~~ machine-readable medium storing computer-executable instructions which, when executed by a processor, implement a process according to claim 1 comprising:

~~in response to a request resulting from detection of a soft error in data in a cache line of a cache;~~

~~stopping fetching of data from the cache without shutting down;~~

~~performing one of clearing the cache, clearing the cache line containing the soft error, and clearing an intermediate portion of the cache containing the soft error;~~  
and

~~resuming fetching of data from the cache.~~

21. (Currently amended) The ~~computer-usable~~ machine-readable medium of claim 20, the process further including reading a memory storing an address of the cache line.

22. (Currently amended) The ~~computer-usable~~ machine-readable medium of claim 20, the process further including invalidating the cache line.

23. (New) An apparatus comprising:

a cache;

a comparator coupled to the cache to compare a calculated parity bit and an expected parity bit, the comparator including an output coupled to an enable input of a recovery register, the enable input to cause the recovery register to store an address of a cache line identified as containing a soft error; and

a selector coupled to the cache line, to select one of a soft error handler request or the cache line based on the comparator output, the soft error handler request to invoke a soft error handler, the soft error handler to receive the address of the cache line identified as containing a soft error from the recovery register, and to perform one of

multiple possible operations to clear the soft error, the multiple possible operations including one of flushing the cache, invalidating a cache line, and clearing an intermediate portion of the cache.

24. (New) The apparatus of claim 23, wherein the soft error handler comprises microcode.